

Greycliff Bridge
Spanning the Yellowstone River
1/2 mile east of Greycliff
Greycliff Vicinity
Sweetgrass County
Montana

HAER No. MT-62

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MONT,
49-GROF.V,
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PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Rocky Mountain Regional Office
Department of the Interior
Denver, Colorado 80225

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HISTORIC AMERICAN ENGINEERING RECORD

GREYCLIFF BRIDGE

I. INTRODUCTION

Location: The Greycliff Bridge is located approximately 1 mile southeast of Greycliff, Montana in the SE1/4 of Section 8, Township 1 South, Range 16 East. The bridge carries a county road over the Yellowstone River.

Quad: Greycliff

UIM: Zone 12, E - 595580, N - 5067900

Date of Construction: 1911 (moved to this location in 1918)

Present Owner: Sweetgrass County
Sweetgrass County Courthouse
Big Timber, Montana

Present Use: Vehicular bridge for a gravel county road

Significance: The Greycliff Bridge is significant for its associations with the homestead boom in Montana and the part the bridge played in diverting an attempt by county divisionists to create a new county out of portions of eastern Sweetgrass County. The Greycliff Bridge is one of the older bridges on the Yellowstone River and a representative example of a pin-connected, Parker through truss. The bridge is also significant for its association with the Security Bridge Company of Minneapolis, Minnesota and Billings, Montana, the most prolific early-20th century bridge-building firm in Montana.

Historian: Lon Johnson, Renewable Technologies, Inc., Butte, Montana, October 1989

II. HISTORY

Census statistics for Montana reveal the rush for land that ran its course from 1900 to 1918. The population of the state stood at 243,329 in 1900, rose to 376,053 in 1910, and stood at 548,889 in 1920. The number of farms in the state for the same period increased from 13,370 to 57,677. Two years of drought and the resultant great exodus made the 1920 census smaller than it would have been in 1918.¹ A number of circumstances coincided with extensive promotional campaigns by the railroads to create this unprecedented rush for land. Passage of the Enlarged Homestead Act of 1909, increased the size of homesteads available from 160 to 320 acres. The development of new farming implements made it easier to operate the larger farms. Agricultural researchers, several of whom were associated with railroads, developed and actively promoted dry land farming techniques in areas previously thought to require irrigation. Greater than average annual precipitation fell for much of the first two decades of the century. The prices for farm products climbed steadily.²

A. HISTORY OF THE GREYCLIFF AREA

In 1909, the Northern Pacific Railroad, which paralleled the Yellowstone River through eastern and south-central Montana, became the last of Montana's transcontinental railroads to begin a major promotional effort to attract settlers to lands along its lines in Montana. Located in south-central Montana, Sweetgrass County was among the areas attracting early arrivals. The Yellowstone River, flowing 55 miles through the middle of the county, formed a

fertile valley two miles wide. The Northern Pacific Railroad provided convenient transportation. In 1910, the local newspaper championed the richness of the surrounding lands, noting the settlers flocking into Sweetgrass County, and boosting it as "Montana's Banner County."³

The great increase in Montana's population also had a dramatic impact on the political face of Montana. Between 1910 and 1925, twenty-eight new counties were created. Often these counties were created around one issue, reliable transportation, and frequently one of the first actions of a new county commission was to authorize the construction of bridges.⁴

In the fall of 1910, S.M. Hiner, a Sweetgrass County homesteader from the north side of the Yellowstone River, visited Big Timber, the county seat on the south of the river. Along with glowing reports of large plantings of winter wheat from his area, he also brought a threat: "... unless we are given easy access to market [the county seat] we will have to go elsewhere."

"Elsewhere" was Columbus, a Yellowstone River town about 40 miles to the east. Not only would the farmers take their business elsewhere, they would also take a portion of the county with them. Residents of Columbus were promoting the formation of a new county from portions of Yellowstone, Carbon, and Sweetgrass counties and observers predicted there would be little opposition from Sweetgrass County farmers north of the river if the county commission did not meet their demands for bridges at Reed Point and Greycliff. The promoters of the bridges affirmed their loyalty to Sweetgrass County and their desire to

do business at home, although they were being forced to do so elsewhere.⁵ This affirmation carried with it an appeal to businessmen in Big Timber to support construction of the bridges.

Beyond the political reason for constructing the bridges were the more traditional reasons of convenience and safety. The Northern Pacific tracks and the towns of Big Timber, Reed Point, and Greycliff were all on the south side of the Yellowstone and homesteaders wishing to reach them were forced to ford the river, often at great danger to life and property. The local newspaper noted that the value of the horses and livestock lost in the river was enough to pay for a bridge.⁶

Promoters of the bridges devised a method for financing the two bridges that would not require a tax increase. They recommended that the County refund its bonded indebtedness by converting outstanding bonds carrying a six per cent interest rate into four and one-half per cent bonds. The savings in interest payments would almost cover the projected cost of the bridges. At the same time, the promoters suggested that the retention of taxable lands by heading off a county division was of itself worth the cost of the bridges.⁷

B. CONSTRUCTION OF THE GREYCLIFF BRIDGE

In September, 1910, the Sweetgrass County Commissioners decided to put the question of the construction of the two bridges, as separate items, to a public vote. They also began the process of refunding the county's debt to

finance the construction costs.⁸ The voters approved bonding the county for \$20,000 for the Reed Point Bridge and \$15,000 for the Greycliff Bridge. Twelve bridge building companies submitted a total of 42 bids for the bridges. Some bids for the Greycliff Bridge were for an "upper" site and some for a "lower" site; the latter was always less expensive. The Commissioners awarded the contract for the construction of the two bridges -- locating the Greycliff Bridge at the "lower" site -- to the Security Bridge Company of Minneapolis, which had a branch office at Billings, Montana.⁹

The original site of the Greycliff Bridge was evidently not adequate, and by 1918, the north bank had washed away. In 1918, the Bridge Department of the State Highway Commission developed plans and specifications for moving the bridge about one-half mile downstream to its present location. Sweetgrass County awarded a contract to the Security Bridge Company to dismantle the bridge and re-erect it on a new substructure.¹⁰

C. SECURITY BRIDGE COMPANY

The Security Bridge Company was the most prolific early 20th century bridge-building company in Montana, especially in south-central and eastern Montana. The Montana Historic Bridge Inventory identified 32 bridges built by the company. In 1906, cousins William S. and Arthur L. Hewett formed the Security Bridge Company in Minneapolis. Both men were born in Hope, Maine. William S. Hewett began his career with the Minneapolis-based bridge building company of his uncle, Seth M. Hewett, in 1887. Ten years later, he formed his

own William S. Hewett and Company in Minneapolis. This company built numerous bridges in Minnesota, the Dakotas, and Montana. Arthur Hewett also began his career with S.M. Hewett and began travelling to Montana in 1892 to represent the company and supervise bridge construction. He went to work for William Hewett's firm as a travelling agent in 1898 and opened a Billings office for that organization in 1904.¹¹

In 1910, Arthur Hewett moved his family to Billings. The following year, the Security Bridge Company filed articles of incorporation with the State of Montana, listing William S. Hewett as president. Shortly thereafter, William began to devote more of his attention to his interest in reinforced concrete (he is credited as one of the inventors of pre-stressed concrete) and by 1913, Arthur Hewett was president of the Security Bridge Company. The Security Bridge Company ceased business in 1926.¹²

III. DESCRIPTION OF THE GREYCLIFF BRIDGE

The Greycliff Bridge is a two-span structure supported by reinforced concrete abutments and a concrete pier. The superstructure of the bridge consists of two, pin-connected, Parker (in a Camelback configuration) through trusses. Total length of each span is 170 feet. Roadway width is 15 feet and out-to-out width of the superstructure is 17 feet. The height from the deck to the bottom of the sway bracing struts is 11 feet 1 inch, while the total vertical height is 27 feet.

Each truss consists of eight panels. The inclined end posts and upper chords are boxed sections comprised of two channel sections riveted with a top cover plate and lacing bars along the lower flanges. The lower chords consist of paired, punched eye-bars measuring 3 inches by 3/4 inches. Hip verticals are two pairs of angle sections, 3 inches by 2 inches, riveted with 1/4-inch batten plates. The other vertical members are boxed sections consisting of two 6-inch channel sections riveted with lacing bars. Diagonal members consist of paired bars, 2-1/2 inches by 3/4 inches; the counters are 3/4-inch round rods with turnbuckles. I-beam floor beams are riveted to the vertical members above the lower chords. The 15-inch I-beam floor beams support wood stringers, which in turn support deck planks. The portal bracing is comprised of paired angle sections in an "A" configuration with wings. Sway bracing is comprised as follows: struts consisting of two pairs of angle sections riveted with lacing bars are connected to the upper chords, two channel sections riveted with batten plates are connected to the verticals, and round rod cross-braces with turnbuckles stiffen the assembly. Bottom lateral bracing is provided by 1-1/8-inch square rods. Top lateral bracing is provided by round rods. Railings on the bridge are wood. An overhead maker's plate on the portal bracing bears the following information: "1911, Security Bridge Co., Minneapolis, Minn. and Billings, Mont."

IV. FUTURE OF THE BRIDGE

The Greycliff Bridge is owned by Sweetgrass County, Montana. The Montana Department of Highways and Sweetgrass County are planning to re-align the gravel road which connects the two sides of the Yellowstone River. These plans call for the replacement of the Greycliff Bridge. In accordance with Section 106 of the National Historic Preservation Act of 1966, the Federal Highway Administration and the Montana Department of Highways have executed a Memorandum of Agreement with the Montana Historical Society and the Advisory Council on Historic Preservation under which this Historic American Engineering Record documentation is taking place. The bridge was also offered for relocation with no response.

V. ENDNOTES

1. Michael P. Malone and Richard B. Roeder, Montana: A History of Two Centuries (Seattle: University of Washington Press, 1978), 148.
2. Fredric L. Quivik, Historic Bridges in Montana (Washington, D.C.: National Park Service, 1982), 30-31; Mary Wilma M. Hargreaves, Dry Farming in the Northern Great Plains: 1900-1925 (Cambridge: Harvard University Press, 1957), 16-17.
3. Hargreaves, 230; Big Timber (Montana) Pioneer, 14 April 1910 and 5 May 1910.
4. Quivik, Historic Bridges in Montana, 30-31.
5. "Renew Demand for Reed Point Bridge" and "New North Side Settlers Go in Heavy on Winter Wheat," Big Timber (Montana) Pioneer, 8 September 1910, 1.
6. "Facts As Applied to Bridge Matter," Big Timber (Montana) Pioneer, 27 October 1910, 1.
7. Big Timber (Montana) Pioneer, 8 September 1910 and 27 October 1910.

8. "Voters Must Decide the Bridge Question," Big Timber (Montana) Pioneer, 22 September 1910, 1.
9. Big Timber (Montana) Pioneer, 22 September, 1910; Sweetgrass County "Commissioners Minute Book 2," 8 November; 8, 15, and 16 December, 1910, Sweetgrass County Courthouse, Big Timber, Montana.
10. Sweetgrass County "Commissioners Minute Book 3," 9 October 1918; State Highway Commission, "Plans for moving Greycliff Bridge," October 1918, on file among archival records for Sweetgrass County in the Bridge Department, Montana Highway Department, Helena.
11. Fred Quivik, "Montana's Minneapolis Bridge Builders," IA: Journal of the Society for Industrial Archeology 10 (1984): 45.
12. Ibid; Tom Stout, History of Montana, Vol. II (Chicago: American Historical Society, 1921), 212-213; Articles of Incorporation for the Security Bridge Company on file at the Office of the Secretary of State, Montana State Capitol, Helena.

VI. BIBLIOGRAPHY

A. BOOKS

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B. ARTICLES AND PAPERS

Quivik, Fredric L. "Montana's Minneapolis Bridge Builders." IA: The Journal of the Society for Industrial Archeology 10 (1984): 41-46.

C. NEWSPAPERS

Big Timber (Montana) Pioneer, 8 September, 22 September, 27 October 1910.

D. GOVERNMENT RECORDS

"Articles of Incorporation, Security Bridge Company." On file at the Office of the Secretary of State, Montana State Capitol, Helena, Montana.

Montana State Highway Commission. "Plans for moving the Greycliff Bridge." On file among archival records for Sweetgrass County, Bridge Department, Montana Department of Highways, Helena, Montana.

Sweetgrass County "Commissioners Minute Books." Sweetgrass County Courthouse, Big Timber, Montana. 8 November; 8, 15, 16, December 1910; 9 October 1918.